



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,254	08/29/2002	Randall L. Barbour	0887-4147US1	9286

27123 7590 09/12/2003  
MORGAN & FINNEGAN, L.L.P.  
345 PARK AVENUE  
NEW YORK, NY 10154

EXAMINER
----------

STAFIRA, MICHAEL PATRICK

ART UNIT	PAPER NUMBER
----------	--------------

2877

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/088,254

Applicant(s)

BARBOUR ET AL.

Examiner

Michael P. Stafira

Art Unit

2877

-- Th MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 and 36-61 is/are rejected.
- 7) ☒ Claim(s) 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of scissors pairs, truss elements, an adjustable ring of principle vertices, a first set of mounts, and a first set of external terminal pivot points, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 42-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification fails to disclose on any page a plurality of scissors pairs, truss elements, an adjustable ring of principle vertices, a first set of mounts, adjustable ring, and a first

Art Unit: 2877

set of external terminal pivot points etc., which is needed to understand the structural relationship between the elements claimed in the application. Figure 7 of the application may show some of the elements but is of so poor quality that the examiner can not determine if the elements are present, but even if the elements could be determined from the drawings, the specification fails to describe the structural relationship between the elements so as for one to be able to make or use the claimed invention.

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 6 recites the limitation "for each detector fiber" in line 2. There is insufficient antecedent basis for this limitation in the claim. A detector fiber failed to be disclosed in the dependent and independent claims.

In as much as the claim(s) can be understood in light of the 112 rejection(s) made above, the following rejection(s) apply:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2877

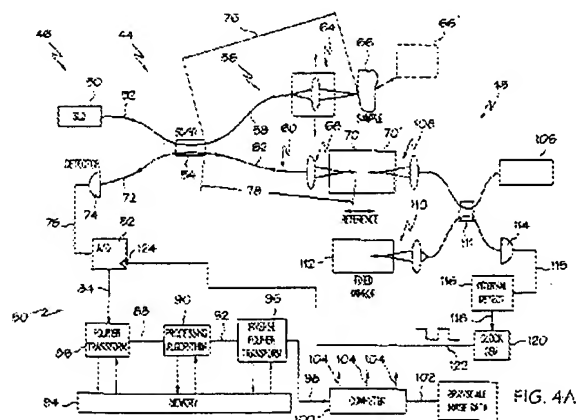
A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3,7 are rejected under 35 U.S.C. 102(e) as being anticipated by Kulkarni et al. ('690).

### Claim 1

Kulkarni et al. ('690) discloses an energy source (Fig. 4a, Ref. 50) for emitting a signal and having at least one energy transmitter coupled (Fig. 4a, Ref. 52) thereto; and a detection system coupled to the energy source and including at least one energy receiver (Fig. 4a, Ref. 74) for measuring dynamic properties of the scattering medium (Fig. 4a, Ref. 66)(See Abstract; Col. 9, lines 20-50).



### Claim 2

Kulkarni et al. ('690) further discloses an imaging head (Fig. 4a, Ref. 64) coupled as the energy transmitter and energy receiver for holding (Fig. 4a, Ref. 52, 58).

### Claim 3

The reference of Kulkarni et al. ('690) further discloses at least one lock-in amplifier for separating a signal emitted by at least one energy source (Col.13, lines 32-44).

Art Unit: 2877

**Claim 7**

Kulkarni et al. ('690) further discloses the energy source is one of a non-laser optical source (Col. 9, lines 25-26).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni et al. ('690) as applied to claim 1 above, and further in view of Kami et al. ('677).

**Claim 4**

Kulkarni et al. ('690) substantially teaches the claimed invention except that it does not show an at least one gain adjustment means for increasing dynamic range of the detector system. Kami et al. ('677) shows that it is known to provide an at least one gain adjustment means for increasing dynamic range of the detector system (Col. 12, lines 51-55) for a device measuring three dimensional image information. It would have been obvious to combine the device of Kulkarni et al. ('690) with the gain adjustment means of Kami et al. ('677) for the purpose of providing increased accuracy in the measurement, therefore improving the quality of the measurement.

**Claim 5**

Kulkarni et al. ('690) substantially teaches the claimed invention except that it does not show a sample-and-hold circuit for freezing the signal emitted by the energy source. Kami et al. ('677) shows that it is known to provide a sample-and-hold circuit for freezing a signal (Col. 11, lines 34-51) for a device measuring three dimensional image information. It would have been

Art Unit: 2877

obvious to combine the device of Kulkarni et al. ('690) with the sample-and-hold of Kami et al. ('677) for the purpose of providing increased accuracy in the measurement, therefore improving the quality of the measurement.

**Claim 6**

Kulkarni et al. ('690) substantially teaches the claimed invention except that it does not show the sample-and-hold circuit includes logic for allowing simultaneous readout. Kami et al. ('677) shows that it is known to provide logic for allowing simultaneous readout (Col. 11, lines 34-51) for a device measuring three dimensional image information. It would have been obvious to combine the device of Kulkarni et al. ('690) with the logic of Kami et al. ('677) for the purpose of providing increased accuracy in the measurement, therefore improving the quality of the measurement.

5. Claims 8,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni et al. ('690) as applied to claim 1 above, and further in view of Alfano et al. ('458).

**Claim 8**

Kulkarni et al. ('690) substantially teaches the claimed invention except that it does not show acquisition from the detection system is about 150Hz. Alfano et al. ('458) shows that it is known to provide an acquisition detection system is about 150Hz for an optical tomography system. It would have been obvious to combine the device of Kulkarni et al. ('690) with the acquisition detection system of Alfano et al. ('458) for the purpose of providing an increased speed of operation, therefore decreasing the amount of time needed for taking data measurements.

**Claim 9**

Kulkarni et al. ('690) substantially teaches the claimed invention except that it does not show the energy source includes a plurality of near infrared laser diodes. Alfano et al. ('458) shows that it is known to provide a plurality of near infrared laser diodes (Col. 8, lines 28-34) for an tomography system. It would have been obvious to combine the device of Kulkarni et al. ('690) with the plurality of near infrared diodes of Alfano et al. ('458) for the purpose of providing a wavelength the can penetrate different layers of an object, therefore increasing it use in measuring different objects.

Art Unit: 2877

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Krueger, Jr. et al. ('066).

### Claim 10

Krueger, Jr. et al. ('066) discloses at least one energy receiver (Fig. 3, Ref. 8) for detecting a signal from an energy source (Fig. 3, Ref. 5) and a programmable gain instrumentation amplifier (Fig. 3, Ref. 30) for increasing the signal, which provides rapid data acquisition about the dynamic properties of the scattering medium (Col. 5, lines 49-66).

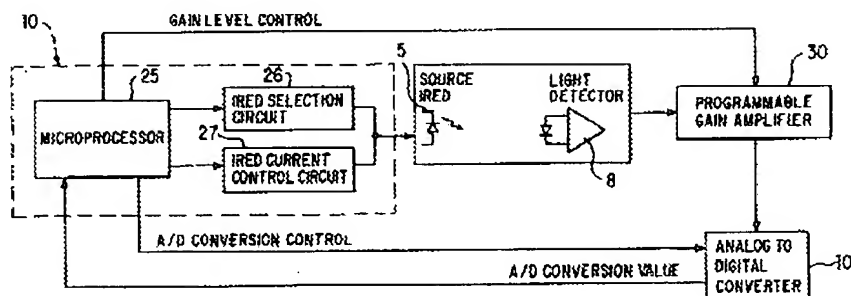


FIG. 3

### Claim 11

Krueger, Jr. et al. ('066) further discloses the energy receiver includes at least one of a photo-diode (Fig. 3, Ref. 8; Col. 5, lines 5-10).

### Claim 12

Krueger, Jr. et al. ('066) further discloses a sample-and-circuit (Fig. 3, Ref. 10) coupled to the programmable gain instrumentation amplifier (Fig. 3, Ref. 30) that allows simultaneous readout of a plurality of signals from the energy source (Col. 5, lines 49-66).

7. Claims 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Bambot et al. ('651).



Art Unit: 2877

**Claim 13**

Bambot et al. ('651) discloses at least one energy transmissive fiber bundle (Fig. 9, Ref. 116) coupled to an energy source (Col. 12-13, lines 56-6); an imaging head (Fig. 9, Ref. 110) for holding the energy transmissive fiber bundle (See Fig. 9); and a detection system for collecting data about the optical dynamic properties of the scattering medium (Col. 13, lines 1-6).

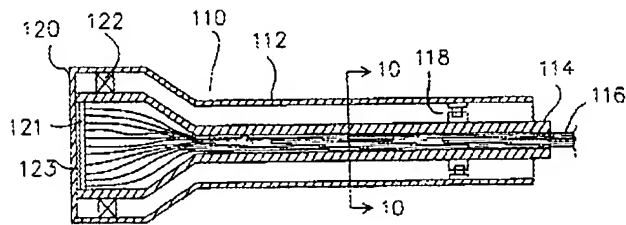


FIG. 9

**Claim 14**

Bambot et al. ('651) further discloses the fiber bundle (Fig. 9, Ref. 116) is bifurcated to both transmit and detect energy (Col. 13, lines 1-6).

**Claim 15**

The reference of Bambot et al. ('651) further discloses the fiber bundle only transmits energy (Fig. 2, Ref. 52).

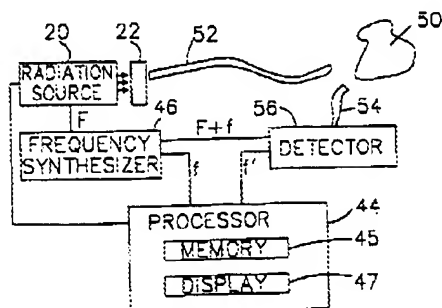


FIG. 2

Bambot et al. ('651) substantially teaches the claimed invention except that it does not show an imaging head is a holding sphere or polygon and the polygon is a polyhedron or a trapezoidal icosatetrahedron, or a hemitrapezoidal icosatetrahedron or the fiber bundle is disposed about the imaging head. Wyatt ('875) shows that it is known to provide an imaging head in a sphere (Fig. 2, Ref. 8) polygon is a polyhedron or a trapezoidal icosatetrahedron, or a hemitrapezoidal icosatetrahedron and the fiber bundle is disposed around the image head (Col. 5, lines 52-55) for an optical measuring probe head. It would have been obvious to combine the device of Bambot et al. ('651) with the sphere of Wyatt ('875) for the purpose of providing a surface that conforms to a surface, therefore increasing the accuracy of the measured values.

FIGURE 2

Bambot et al. ('651) substantially teaches the claimed invention except that it does not show an adjustment means for accommodating different size medium, stabilizing the medium against motion artifacts, conforming the target to a simple well-defined geometry and providing information about the location of at least the receiver in reference to the location of the transmitter. Wyatt ('875) shows that it is known to provide an adjustment means for accommodating different size medium, stabilizing the medium against motion artifacts,

Art Unit: 2877

conforming the target to a simple well-defined geometry and providing information about the location of at least the receiver in reference to the location of the transmitter (See Fig. 2) for an optical inspection apparatus. It would have been obvious to combine the device of Bambot et al. ('651) with the conforming head of Wyatt ('875) for the purpose of providing decrease the amount of light loss from the sensor head, therefore increasing the sensitivity of the measurement.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bambot et al. ('651).

**Claim 19**

Bambot et al. ('651) discloses the claimed invention except for the fiber bundle has a diameter of 3mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Bambot et al. ('651) with the 3mm fiber bundle, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would be obvious to one skilled in the art at the time of the invention because using a 3mm fiber bundle allows the device to be used in a smaller area, therefore increasing its use in different areas.

10. Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfano et al ('458) in view of Krueger, Jr., et al. ('066).

**Claim 21**

Alfano et al ('458) discloses exposing a scattering medium to near infrared light (Col. 8, lines 26-35; Col. 9, lines 20-21); for collecting data about the dynamic properties of a scattering medium (Col. 8, lines 35-50), detecting light by a detection system (See Fig. 3b).

Alfano et al ('458) substantially teaches the claimed invention except that it does not show enhancing gain through programmable gain instrumentation amplifier for the purpose of measuring the dynamic properties of the scattering medium. Krueger, Jr., et al. ('066) shows that it is known to provide an enhancing gain through programmable gain instrumentation amplifier for the purpose of measuring the dynamic properties of the scattering medium (Col. 5, lines 49-66) for an apparatus for measuring properties with near infrared light. It would have been obvious to combine the device of Alfano et al ('458) with the programmable gain of Krueger, Jr., et al. ('066) for the purpose of providing increased accuracy in the measurement, therefore improving the quality of the measurement.

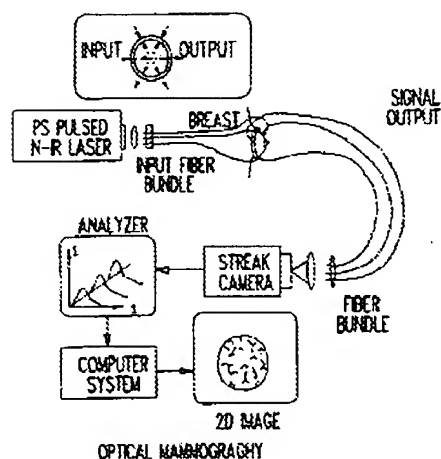


FIG. 3(b)

**Claim 22**

Alfano et al ('458) discloses the scattering medium is vascular tissues (See Fig. 3b).

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alfano et al ('458) as applied to claim 21 above, and further in view of Kulkarni et al. ('690).

Art Unit: 2877

**Claim 23**

Alfano et al ('458) substantially teaches the claimed invention except that it does not show an lock-in amplifier. Kulkarni et al. ('690) shows that it is known to provide a lock-in amplifier (Col. 13, lines 38-44) for an tomography apparatus. It would have been obvious to combine the device of Alfano et al ('458) with the lock-in amplifier of Kulkarni et al. ('690) for the purpose of providing increased sensitivity to the measured area, therefore allowing the measured data to be more accurate.

**Claim 24**

Alfano et al ('458) further discloses collecting data from simultaneous readout of a signal (Col. 9-10, lines 19-40).

Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfano et al ('458) in view of Krueger, Jr., et al. ('066).

**Claim 25**

Alfano et al ('458) discloses an imaging head (See Fig. 3b) having at least one source disposed to direct optical energy into a medium and a plurality of detectors disposed to receive optical energy emerging from the medium (See Fig. 3b), the detectors means being located at a plurality of distances from the source constituting a plurality of distances through the medium the detectors and the source (See Fig. 3b), the source and detectors forming respective source detector pairs (See Fig. 3b).

Art Unit: 2877

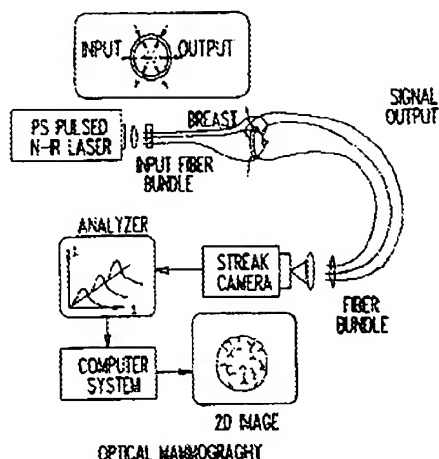


FIG. 3(b)

Alfano et al ('458) substantially teaches the claimed invention except that it does not show enhancing gain through programmable gain instrumentation amplifier and having a computer connected. Krueger, Jr., et al. ('066) shows that it is known to provide an enhancing gain through programmable gain instrumentation amplifier (Col. 5, lines 49-66) and a computer (Fig. 3, Ref. 25) for an apparatus for measuring properties with near infrared light. It would have been obvious to combine the device of Alfano et al ('458) with the programmable gain of Krueger, Jr., et al. ('066) for the purpose of providing increased accuracy in the measurement, therefore improving the quality of the measurement.

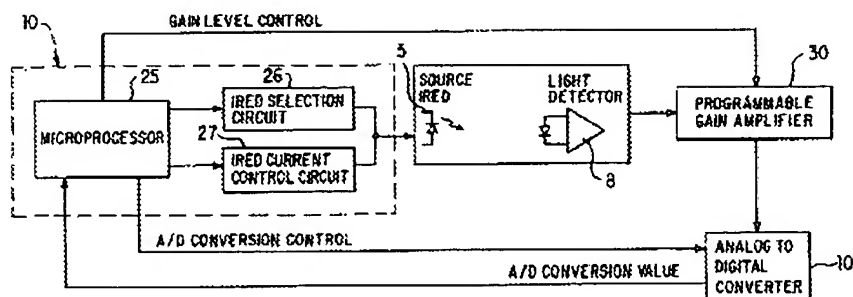


FIG. 3

**Claim 26**

Alfano et al ('458) discloses optical energy of at least two different intensity modulated wavelengths of energy (Col. 11, lines 24-27).

**Claim 27**

Alfano et al ('458) discloses the claimed invention except for a filtering means for separating signals corresponding to a wavelength of intensity-modulated energy. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Alfano et al ('458) with the filtering means since it was well known in the art that using filters for filtering wavelengths decreases the amount of cross-talk between different optical fibers and therefore increases the reliability of the measurement.

12. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alfano et al ('458) in view of Kulkarni et al. ('690) as applied to claim 25 above, and further in view of Kami et al. ('677).

**Claim 28**

Alfano et al ('458) in view of Kulkarni et al. ('690) substantially teaches the claimed invention except that it does not show a sample-and-hold circuit for freezing the signal emitted by the energy source. Kami et al. ('677) shows that it is known to provide a sample-and-hold circuit for freezing a signal (Col. 11, lines 34-51) for a device measuring three dimensional image information. It would have been obvious to combine the device of Alfano et al ('458) in view of Kulkarni et al. ('690) with the sample-and-hold of Kami et al. ('677) for the purpose of providing increased accuracy in the measurement, therefore improving the quality of the measurement.

Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfano et al ('458) in view of Krueger, Jr., et al. ('066).

Art Unit: 2877

**Claim 29**

Alfano et al ('458) discloses the energy transmissive fibers coupled to an energy-emitting source (See Fig. 3b).

**Claim 30**

Alfano et al ('458) further discloses a plurality of optical energy sources (See Fig. 4).

**Claim 31**

Alfano et al ('458) in view of Kulkarni et al. ('690) discloses the claimed invention except for source is a plurality of laser diodes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Alfano et al ('458) in view of Kulkarni et al. ('690) with laser diodes since it was well known in the art that using a plurality of laser diodes increases the sensitivity of the measurement.

**Claim 32**

Alfano et al ('458) discloses the detectors are fibers coupled to optical energy detectors (See Fig. 3b).

**Claim 33**

Alfano et al ('458) further the detectors are optical energy detectors (See Fig. 3b).

13. Claims 34,36-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Bambot et al. ('651).

**Claim 34**

Bambot et al. ('651) discloses a pad (Fig. 9, Ref. 120); a plurality of source means for delivering optical energy to a medium (Col. 13, lines 1-6); and a plurality of detector means for detecting optical energy emerging from a medium (Col. 13, lines 1-7), the source means and detector means being attached to the pad (See Fig. 9) in a plurality of rows and columns wherein the plurality of source means are arranged to form at least two unique imaging planes (See Fig.



Art Unit: 2877

11), an imaging plane being between defined by a plane substantially perpendicular to the pad and passing through at least two source means and one detector means (See Fig. 9 and 11).

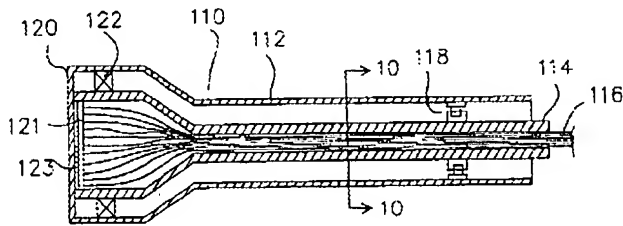


FIG. 9

**Claim 36**

Bambot et al. ('651) further discloses the source means are fibers coupled to an optical energy source Col. 13, lines 1-6).

**Claim 37**

The reference of Bambot et al. ('651) further discloses the optical sources are optical energy sources (Col. 13, lines 1-6).

14. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bambot et al. ('651).

**Claim 38**

Bambot et al. ('651) discloses the claimed invention except for source is a plurality of laser diodes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Bambot et al. ('651) with laser diodes since it was well known in the art that using a plurality of laser diodes increases the sensitivity of the measurement.

Art Unit: 2877

15. Claims 39,40 are rejected under 35 U.S.C. 102(e) as being anticipated by Bambot et al. ('651).

**Claim 39**

Bambot et al. ('651) discloses the detector means are fibers coupled to optical energy detectors (Col. 13, lines 1-6).

**Claim 40**

The reference of Bambot et al. ('651) further discloses the detector means are optical energy detectors (See Fig. 2).

16. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bambot et al. ('651).

**Claim 41**

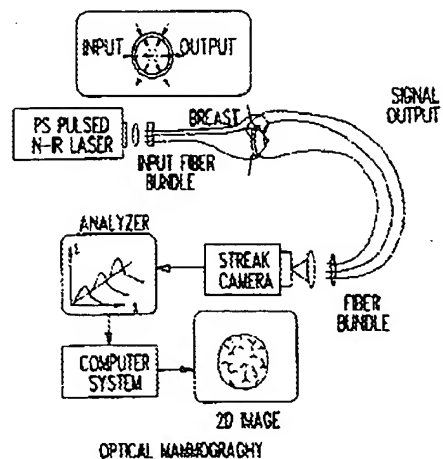
Bambot et al. ('651) discloses the claimed inventions except for the detector are photodiodes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Bambot et al. ('651) with photodiodes since it was well known in the art that using a plurality of photodiodes increases the sensitivity of the measurement.

17. Claims 51-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Alfano et al. ('458).

**Claim 51**

Alfano et al. ('458) discloses at least one energy receiver (See Fig. 3b); adjustment means for accommodating different sizes (See Fig. 3a & 3b); and communication means for transmitting signals from the imaging head to a detection system for medium (See computer system), use in the measurement of dynamic properties of a scattering (Col. 8-9, lines 25-30).

Art Unit: 2877

**FIG. 3(b)****Claim 52**

Alfano et al. ('458) discloses at least one energy transmitter (See Fig. 3b).

**Claim 53**

The reference of Alfano et al. ('458) further discloses energy transmitters define an illumination array configured to minimize subsequent numerical effort required for data analysis and maximizing source density covered by the array (See Fig. 3b).

**Claim 54**

Alfano et al. ('458) further discloses three dimensional images can be computed from super positioning of the array of two dimensional images (See Fig. 3a).

**Claim 55**

Alfano et al. ('458) further discloses the energy receiver detects fluorescence radiation excited by the energy source (Col. 7-8, lines 38-67).

**Claim 56**

Alfano et al. ('458) further discloses the energy receiver further detects acoustic energy produced in the scattering medium by an optical source (Col. 8, lines 26-67).

**Claim 57**

Alfano et al. ('458) discloses the fiber bundle only detects energy (Col. 8, lines 26-67).

Art Unit: 2877

**Claim 58**

Alfano et al. ('458) discloses the transmissive fiber bundle terminates inside the scattering medium (See Fig. 3a).

18. Claims 59-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfano et al. ('458).

**Claims 59-61**

Alfano et al. ('458) discloses the claimed invention except for evaluating the dynamics in an industrial mixing process or foggy atmospheres for meteorology or oceans or water masses etc... It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Alfano et al. ('458) with the dynamics since it was well known in the art that measuring light in different dynamics allows the apparatus to be marketed in different areas, therefore allowing it to be used as a multipurpose optical measuring tool.

***Allowable Subject Matter***

19. Claim 35 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 703-308-4837.

The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

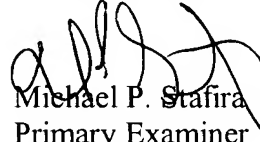
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 703-308-4881. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Application/Control Number: 10/088,254

Page 20

Art Unit: 2877

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
Michael P. Stafira  
Primary Examiner  
Art Unit 2877

August 28, 2003